CLAIMS:

1. A prosthetic spinal nucleus device for replacing a nucleus of a spinal disc and for being implanted between adjacent axially spaced upper and lower vertebrae, the device comprising:

a rigid upper shell for contacting the upper vertebra and sized to fit within an annulus of the spinal disc;

a rigid lower shell for contacting the lower vertebra and sized to fit within the annulus of the spinal disc; and

at least one bearing member between the upper and lower shells and allowing for relative movement between the upper and lower shells such that the annulus retains the device therein.

2. The device of claim 1 wherein the at least one bearing member is a polyaxially articulating bearing member between at least one of the upper and lower shells.

3. The device of claim 1 wherein the shells and any bearing member may be sequentially inserted through an incision in the annulus, and the device may be assembled within the annulus.

4. The device of claim 1 further including a spacer member forming any articulating bearing member, wherein the device has a compressed arrangement during insertion of the device within the annulus, and the device may be expanded to an expanded arrangement after implantation in the annulus.

5. The device of claim 1 wherein the upper shell has a generally smooth top surface for non-invasive contact with the upper vertebrae within the annulus of the spinal disc, and the lower shell has a generally smooth bottom surface for non-invasive contact with the lower vertebrae within the annulus of the spinal disc.

6. The device of claim 1 wherein each shell has a lateral dimension spanning from lateral ends of the shell and has a longitudinal dimension spanning from longitudinal ends of the shell, each lateral dimension is larger than the longitudinal dimension, and each shell may be inserted through an incision in annulus with the lateral end leading first into the incision.

7. The device of claim 6 wherein the annulus has a lateral dimension and a longitudinal dimension such that the lateral dimension of the annulus is greater than the longitudinal dimension of the annulus, and each shell may be positioned such that the lateral dimension of the shell is aligned with the lateral dimension of the annulus.

8. The device of claim 7 wherein each shell may be rotated as it is inserted through the incision so that the inserted shell is positioned such that the lateral dimension of the shell is aligned with the lateral dimension of the annulus.

9. The device of claim 7 wherein each shell may be rotated after it is inserted through the incision so that the inserted shell is positioned such that the lateral dimension of the shell is aligned with the lateral dimension of the annulus.

10. A prosthetic spinal nucleus device for replacing a nucleus of a spinal disc and for being implanted between adjacent axially spaced upper and lower vertebrae, the device comprising:

a rigid upper shell for contacting the upper vertebra and sized to fit within an annulus of the spinal disc;

a rigid lower shell for contacting the lower vertebra and sized to fit within the annulus of the spinal disc; and

at least one bearing member between the upper and lower shells and allowing for polyaxial movement and sliding of the upper and lower shells movement between the upper and lower shells.

11. The device of claim 10 wherein the bearing member includes:

a convex surface with a radius of curvature; and

a concave surface receiving the convex surface and having a radius of curvature wherein the relative radii of curvature may be selected to provide a stiffness for the polyaxial movement between the upper and lower shells.

12. A prosthetic spinal nucleus device for replacing a nucleus of a spinal disc and for being implanted between adjacent axially spaced upper and lower vertebrae, the device comprising:

a rigid upper shell with a convex top surface for contacting the upper vertebra and selected according to a concavity of the vertebra top surface, the shell being sized to fit within an annulus of the spinal disc;

a rigid lower shell with a convex bottom surface for contacting the lower vertebra and selected according to a concavity of the lower vertebrae, the shell being sized to fit within the annulus of the spinal disc; and

at least one bearing member between the upper and lower shells and allowing for relative movement between the upper and lower shells.

13. The device of claim 12 wherein at least one of the convex surfaces has a radius of curvature greater than a radius of curvature of the vertebra the at least one convex surface contacts.

14. The device of claim 12 wherein at least one of the convex surfaces has a radius of curvature smaller than a radius of curvature of the vertebra the at least one convex surface contacts.

15. The device of claim 12 wherein at least one of the convex surfaces has a radius of curvature equal to a radius of curvature of the vertebra the at least one convex surface contacts.

16. A method of replacing a nucleus of a spinal disc, the steps including:

providing an implant device including a plurality of components;

determining a minimum bounded loop size through which each of the components can pass;

providing an incision in an annulus of the spinal disc such that the incision forms a deformable bounded loop sized according to the minimum bound loop size through which each of the components can pass;

orienting the components for insertion through the incision;

inserting sequentially the components through the incision; and

assembling the components to form the device within the annulus.

17. The method of claim 16 further including the step of rotating at least one of the components after a leading edge of the component is inserted within the annulus.

18. A method of replacing a nucleus of a spinal disc, the steps including:

providing an implant device having a rigid top member, a rigid bottom member, and a spacer member;

assembling the device in a collapsed arrangement with a pre-determined size in a pre-determined direction;

providing an incision in an annulus of the spinal disc such that the incision forms a deformable bounded loop sized according to the pre-determined size such that the device in the collapsed arrangement can pass through the incision;

inserting the device in the collapsed arrangement through the incision; and

expanding the device such that the device has an expanded arrangement with a size greater than the pre-determined size at least in the pre-determined direction.

19. The method of claim 18 wherein the step of expanding the device includes moving a portion of the spacer member relative to at least one of the top and bottom members.

20. The method of claim 18 wherein the step of expanding the device includes injecting a flowable material into the spacer member to expand the spacer member between the top and bottom members.